Lonce Wyse

Associate Professor
Communications and New Media

Director, Arts and Creativity Lab
Interactive and Digital Media Institute

Faculty of Arts and Social Sciences
National University of Singapore
lonce.wyse@nus.edu.sg

Education:

Ph.D. August 1993	B.S. May 1986	H.S. May 1978
Boston University	University of Hartford	Interlochen Arts Academy
Cognitive and Neural Systems	Math and Computer Science	Electronic Music Composition

My research interests are in theoretical and computational techniques for the creation and analysis of interactive media, particularly music and sonic arts.

Summary and Highlights: Following my PhD in 1993, I was awarded a Fulbright Fellowship at Taiwan National University to study perceptual models of sound and musical pitch processing. I teach in the area of interactive media design, theory, and analysis in the Department Communications and New Media at NUS. I hold joint appointments with the Interactive and Digital Media Institute where I direct the Arts and Creativity Lab, and with the NUS Graduate School for Integrative Sciences and Engineering. Sound modeling technology I developed was transferred to industry in 1999 and 2007. I serve on the editorial boards of Computer Music Journal (MIT Press), Organized Sound (Cambridge University Press), and the International Journal of Performance Arts and Digital Media. My current research focus is on live collaborative and distributed media performance communication strategies, and musical interfaces.

Appointments:

8/2006-present	*Associate Professor*, Department of Communications and New Media, Faculty of Arts and Social Sciences, National University of Singapore.
	Deputy Department Head (8/2012-present).
	Director, Arts and Creativity Lab, Interactive and Digital Media Institute.
8/2006-present	*Technology Advisor*, Sonoport Pte. Ltd. – sound effects creation and internet distribution.
7/2003-7/2006	*Adjunct Associate Professor*, University Scholars Program, National University of Singapore. Sonic Arts and Sciences (2003/4, Asst. Prof)
2001-8/2006	*Lead Scientist*, Institute for Infocomm Research, a Singapore national research laboratory. Sound representation, independent component analysis, sound analysis & synthesis.
1999-2001	*R & D Director*, Mindmaker Pte Ltd, Singapore (&USA). Conducted R&D in real-time embedded sound synthesis, supervised staff in sound and speech synthesis. Market strategy and business development.
1994-1999	*Research Associate*, Kent Ridge Digital Labs (now I^{2}R). Developing audio analysis for automatic media content labeling. Sound synthesis algorithm development.
1993-94	*Fulbright Foundation Fellow*. Developing a computational model of the auditory brain at Taiwan National University.
1992-93	*Research Assistant*, Boston University. Neural network & cognitive approaches to vision and auditory modeling.
1989-92	*National Defense Science & Engineering Fellow*, Boston University. Awarded 3 years of graduate research funding.

1986-87	*A.I. Software Engineer*, Cognitive Systems Inc., New Haven, CT. Developed a Natural Language interface for database queries.
1988-89	*Software Engineer*, Dr. T's Music Software, Newton, MA. Developed music applications software for PC's.
1985	*Teaching Assistant in Artificial Intelligence*, University of Hartford.
1981-1985	*Recording Studio Engineer*, *Event Production*, Real Art Ways (at the time, the 4th largest alternative arts space in the US).

PUBLICATIONS

Journal Articles (refereed)

[1] L. Wyse and J. Yew, "A Real-time Score for Collaborative Just-In-Time Composition," *Organized Sound*, vol. 19, no. 3, 2014.

[2] L. Wyse and S. K. Subramanian, "The Viability of the Web Browser as a Computer Music Platform," *Computer Music Journal*, vol. 37, no. 4, pp. 10–23, 2013.

[3] A. Schirmer, Y. H. Soh, T. Penney, and L. Wyse, "Perceptual and conceptual priming of environmental sounds," *Journal of Cognitive Neuroscience*, vol. 23, no. 11, pp. 3241–53, 2011.

[4] S. Nanayakkara, E. Taylor, L. Wyse, and S. H. Ong, "Enhancing musical experience for the hearing-impaired using visual & haptic inputs," *Human-Computer Interaction*, vol. 28, pp. 115–160, 2013.

[5] X. Zhu, G. T. Beauregard, and L. L. Wyse, "Real-Time Signal Estimation From Modified Short-Time Fourier Transform Magnitude Spectra," *IEEE Trans. Audio Speech Lang. Process.*, vol. 15, no. 5, pp. 1645–1653, Jul. 2007.

[6] M. Rajapakse, L. Wyse, and V. Brusic, "Deriving Matrix of Peptide-MHC Interactions in Diabetic Mouse by Genetic Algorithm," in *Intelligent Data Engineering and Automated Learning*, vol. 3578, 2005, pp. 440–447.

[7] S. Grossberg, K. Govindarajan, L. Wyse, and M. Cohen, "ARTSTREAM: a neural network model of auditory scene analysis and source segregation," *Neural Networks*, vol. 17, no. 4, pp. 511–536, May 2004.

[8] L. Wyse, "Free music and the discipline of sound," *Org. Sound*, vol. 8, no. 03, pp. 237–247, Apr. 2004.

[9] L. Wyse and P. Kellock, "Embedding interactive sounds in multimedia applications," *Multimedia Systems*, vol. 7, no. 1, pp. 48–54, Jan. 1999.

[10] M. Cohen, S. Grossberg, and L. Wyse, "A spectral network model of pitch perception," *J. Acoust. Soc. Am.*, vol. 98, no. 2, pp. 862–879, 1995.

[11] S. Grossberg and L. Wyse, "A neural network architecture for figure-ground separation of connected scenic figures," *Neural Networks*, vol. 4, no. 6, pp. 723–742, 1991.

Conference Proceedings

[1] L. Wyse, "Interactive Audio Web Development Workflow," in *Proceedings of the 22nd ACM International Conference on Multimedia*, Orlando, Florida, 2014.

[2] L. Wyse, "States of Diffusion for n+1 devices," in *Proceedings of the 22nd ACM International Conference on Multimedia*, Orlando, Florida, 2014.

[3]   L. Wyse and P. Shinghal, "Sonicbard – Storytelling With Real-Time Sound Control, Synthesis And Processing Using Emerging Browser-Based Technologies," in *Proceedings of International Computer Music Conference*, Perth, Australia, 2013.

[4]   S. Fasciani and L. Wyse, "A Self-Organizing Gesture Map for a Voice-Controlled Instrument Interface," in *Proceedings of the 13th International Conference on New Interfaces for Musical Expression*, Seoul, Korea, 2013.

[5]   L. Wyse, S. Nanayakkara, P. Seekings, S. H. Ong, and E. A. Taylor, "Palm-area sensitivity to vibrotactile stimuli above 1 kHz," in *Proceedings of the 12th International Conference on New Interfaces for Musical Expression*, Ann Arbor. MI, 2012.

[6]   L. Wyse and S. Subramanian, "Foundations of interactive sound design for traditional storytelling," in *Proceedings of the International Computer Music Conference*, Ljubjana, Slovenia, 2012.

[7]   S. Subramanian, L. Wyse, and K. McGee, "A Two-component representation for modeling gamakas of Carnatic music," in *Proceedings of the 2nd CompMusic Workshop*, Besiktas, Istanbul, 2012.

[8]   S. Nanayakkara, L. Wyse, and E. Taylor, "The Haptic Chair as a Speech Training Aid for the Deaf," in *Proceedings of OzCHI*, Melbourne Australia, 2012.

[9]   S. Nanayakkara, L. Wyse, and E. A. Taylor, "Effectiveness of the Haptic Chair in Speech Training," in *Proceedings of the 14th International Conference on Computers and Accessibility*, Boulder, CO, USA, 2012.

[10]   S. Fasciani and L. Wyse, "Adapting general purpose interfaces to synthesis engines using unsupervised dimensionality reduction techniques and inverse mapping from features to parameters," in *Proceedings of the 2012 International Computer Music Conference*, Ljubjana, Slovenia, 2012.

[11]   S. Fasciani and L. Wyse, "A voice interface for sound generators: adaptive and automatic mapping of gestures to sound," in *Proceedings of the 12th International Conference on New Interfaces for Musical Expression*, Ann Arbor, MI, 2012.

[12]   L. Wyse and K. Tan, "Automating Smooth Transitions Between Arbitrary Rhythmic Patterns," in *International Computer Music Conference*, Huddersfield, UK, 2011.

[13]   L. Wyse, S. Nanayakkara, and N. Mitani, "Biases and interaction effects in gestural acquisition of auditory targets using a hand-held device," in *Proceedings of OZCHI 2011*, Canberra, Australia, 2011.

[14]   L. Wyse, N. Mitani, and S. Nanayakkara, "The effects of visualizing audio targets in a musical listening and performance task," in *Proceedings of the International Conference on New Interfaces for Musical Expression*, Oslo, Norway, 2011.

[15]   B. Sudarshan and L. Wyse, "Computer Mediated Visual Communication in Live Musical Performance: What's the Score?," in *Proceedings of the Second International ICST Conference on Arts and Technology*, Esbjerg, Denmark, 2011.

[16]   S. Subramanian, L. Wyse, and K. McGee, "Modeling Speed Doubling in Carnatic Music," in *Proceeding of the International Computer Music Conference*, Huddersfield, UK, 2011.

[17]   L. Wyse and D. D. Nguyen, "Instrumentalizing Synthesis Models," in *Proceedings of the International Conference on new interfaces for Musical Expression*, Sydney, Australia, 2010.

[18]   N. Osaka, S. Shin, and L. Wyse, "Founding of the Asia Computer Music Project," presented at the International Computer Music Conference – the "Unconference," New York, 2010.

[19]   T. Merritt, K. W. Kow, C. N. Ng, K. McGee, and L. Wyse, "Who Makes What Sound? Supporting real-time musical improvisations of electroacoustic ensembles," in *Proceedings of OZCHI 2010*, QUT, Brisbane, Australia, 2010.

[20] L. Wyse and N. Mitani, "Bridges for Networked Musical Ensembles," in *Proceedings of the International Computer Music Conference*, Montreal, Canada, 2009.

[21] S. Nanayakkara, E. Taylor, L. Wyse, and S. H. Ong, "An enhanced musical experience for the deaf," in *Proceedings of the 27th International Conference on Human Factors in Computing Systems*, Boston, MA, USA, 2009, p. 337.

[22] N. Mitani and L. Wyse, "Information sharing in a networked music application," in *Proceedings of the Australasian Computer Music Conference*, Brisbane, Australia, 2009.

[23] S. Nanayakkara, E. A. Taylor, L. Wyse, and S. H. Ong, "Towards building an experiential music visualizer," presented at the 6th International Conference on Information, Communications and Signal Processing, Singapore, 2007.

[24] E. Glinert and L. Wyse, "AudiOdyssey: an accessible video game for both sighted and non-sighted gamers," in *Proceedings of the 2007 conference on Future Play*, 2007, pp. 251–252.

[25] X. Zhu, G. T. Beauregard, and L. Wyse, "Real-time iterative spectrum inversion with look-ahead," in *2006 IEEE International Conference on Multimedia and Expo*, 2006, pp. 229–232.

[26] L. Wyse, "Real-time synchronization of independently controlled phasors," in *Proceedings of the International Computer Music Conference November*, New Orleans, Louisiana, USA, 2006.

[27] C. Pendharkar, M. Gurevich, and L. Wyse, "Parameterized morphing as a mapping technique for sound synthesis," in *Proc. of the Int. Conf. on Digital Audio Effects (DAFx-06), Montreal, Quebec, Canada*, 2006, pp. 45–48.

[28] L. Wyse, "Generative Sound Models," in *Proceedings of the 11th IEEE International Multimedia Modelling Conference, 2005.*, Melbourne, 2005, pp. 370–377.

[29] M. Rajapakse and L. Wyse, "Generic Audio Classification Using a Hybrid Model Based on GMMs and HMMs," in *Proceedings of the Multimedia Modeling Conference*, Melbourne, Australia, 2005.

[30] G. Beauregard, X. Zhu, and L. Wyse, "An efficient algorithm for real-time spectrogram inversion," in *Proceedings of the 8th International Conference on Digital Audio Effects*, Madrid, Spain, 2005, pp. 116–118.

[31] X. L. Zhu and L. Wyse, "Sound texture modeling and time-frequency LPC," in *Proceedings of the 7th International Conference on Digital Audio Effects*, Naples, Italy, 2004, pp. 345–349.

[32] L. Wyse, "Contour Hierarchies, Tied Parameters, Sound Models and Music," in *Proceedings of the International Computer Music Conference*, Florida, USA, 2004.

[33] L. Wyse, Y. Wang, and X. Zhu, "Application of a content-based percussive sound synthesizer to packet loss recovery in music streaming," in *Proceedings of the eleventh ACM international conference on Multimedia*, Berkeley, CA, 2003, p. 338.

[34] L. Wyse, "A Sound Modeling and Synthesis System Designed for Maximum Usability," in *Proceedings of the 29th International Computer Music Conference*, Singapore, 2003, p. 447.

[35] M. Rajapakse and L. Wyse, "NMF vs ICA for face recognition," in *Proceedings of the 3rd International Symposium on Image and Signal Processing and Analysis*, 2003, vol. 2, pp. 605–610 Vol.2.

[36] M. Rajapakse and L. Wyse, "Face Recognition with Non Negative Matrix Factorization," in *Proceedings of the Third International Symposium on Image and Signal Processing and Analysis*, Rome, Italy, 2003.

[37] W. Huang, S. Lau, T. Tan, L. Li, and L. Wyse, "Audio events classification using hierarchical structure," in *Proceedings of the Joint Conference of the Fourth International Conference on Information, Communications and Signal Processing, and*

the Fourth Pacific Rim Conference on Multimedia., Singapore, 2003, vol. 3, pp. 1299–1303 vol.3.

[38] P. Gao, E. Chang, and L. Wyse, "Blind separation of fetal ECG from single mixture using SVD and ICA," in *Proceedings of the Fourth Pacific Rim Conference on Multimedia*, 2003, vol. 3, pp. 1418–1422 vol.3.

[39] L. Wyse and S. Smoliar, "Toward Content-Based Audio Indexing and Retrieval," in *Proceedings of the International Joint Conference on Artificial Intelligence*, Montréal, Canada, 1995.

[40] L. Wyse, "Flexible Sound Effects," in *Proceedings of the International Computer Music Conference*, Thessaloniki, Greece, 1997.

[41] L. Wyse, "Some Whats and Wheres about CSound," *ARRAY Int. Comput. Music Assoc.*, 1996.

[42] S. Grossberg, K. Govindarajan, L. Wyse, and M. Cohen, "A Neural Model of Auditory Scene Analysis and Source Segregation," presented at the The 130th Meeting of the Acoustical Society of America, St. Louis, 1995.

[43] M. A. Cohen, S. Grossberg, and L. Wyse, "A Neural Network for Synthesizing the Pitch of an Acoustic Source," in *Proceedings of the International Joint Conference on Neural Networks*, 1992, vol. 4, pp. 649–654 vol.4.

[44] M. Cohen, S. Grossberg, and L. Wyse, "Harmonic Weighting Functions in a Neural Network Model of Pitch Detection and Representation," in *Proceedings of the International Joint Conference on Neural Networks*, Beijing, China, 1992.

[45] S. Grossberg and L. Wyse, "Invariant Recognition of Cluttered Scenes by a Self-organizing ART Architecture: Figure-Ground Separation," in *Proceedings of the International Joint Conference on Neural Networks*, Seattle, Washington, 1991.

[46] S. Grossberg and L. Wyse, "Automatic Figure-Ground Separation by an Iterated Boundary Segmentation and Filling-in Network," in *Proceedings of the Wang Institute Neural Network Conference*, 1990.

Conference Presentation

[1] L. Wyse, "Emerging Web Technologies and Sonic Arts," presented at the Net-Music 2013: The Internet as Creative Resource in Music, Singapore, 2013.

[2] L. Wyse, "Creativity, Interdisciplinarity and the New Relevance of the Arts," presented at the Innovation and Creativity in Research and Education within the Humanities, Copenhagen, Denmark, 2012.

[3] L. Wyse, "Computer Mediated Visual Communication in Live Musical Performance," presented at the Singapore HCI Symposium, Singapore, 2012.

[4] L. Wyse, I. Whalley, and K. Fields, "Connecting for Music in the Asia/Pacific," presented at the Music Anywhere, Anytime; International Symposium on Synchronous Distance Learning, Manhattan School of Music, New York, 2011.

[5] L. Wyse and B. Sudarshan, "Visual Strategies in Computer Supported Music," presented at the Electroacoustic Music Studies, New York, 2011.

[6] Y. H. Soh, A. Schirmer, T. Penney, and L. Wyse, "Dissociating Perceptual and Semantic Priming of Sounds," presented at the Society for Psychophysiological Research, 50th annual Meeting, Portland, Oregon, 2010.

[7] S. W. Liu, L. Wyse, A. Schirmer, and T. Penney, "Cross-modal context affects unattended sound categorization," presented at the Society for Psychophysiological Research, 50th annual Meeting, Portland, Oregon, 2010.

[8] L. Wyse, "The Musical Significance of Objects," presented at the Electroacoustic Music

Studies 2009, Buenos Aires, Argentina, 2009.

[9]   L. Wyse, "Approaches to Research in Electroacoustic Music Perception," presented at the Society for Music Perception Conference, Indianapolis, Indiana, 2009.

[10] L. Wyse, "The Emergence of Electroacoustic Music in Singapore," presented at the Electroacoustic Music Studies 2008, La Sorbonne, Paris, France, 2008.

[11] L. Wyse, "Sound Models in the Construction and Analysis of All-sound Music," presented at the Electroacoustic Music Studies, De Montfort University, Leicester, UK, 2007.

Book Chapters

[1]   R. Berry and L. Wyse, "The Music Table Revisited," in *Multimodal Studies Exploring Issues and Domains*, K. O'Halloran and B. Smith, Eds. Routledge, USA, 2009.

[2]   E. Altman and L. Wyse, "Emergent Semantics from Media Blending," in *Managing Multimedia Semantics*, U. Srinivasan and S. Nepal, Eds. 2005, pp. 363–390.

[3]   L. Wyse and S. Smoliar, "Toward Content-Based Audio Indexing and Retrieval and a New Speaker Discrimination Technique," in *Computational Auditory Scene Analysis*, H. Okuno and D. Rosenthal, Eds. Canada: Erlbaum, 1998, pp. 351–361.

[4]   S. Grossberg and L. Wyse, "Figure-Ground Separation of Connected Scenic Figures: Boundaries, Filling in and Opponent Processing," in *Neural Networks for Vision and Image Processing*, S. Grossberg and G. Carpenter, Eds. Cambridge, MA: MIT Press, 1992.

Invited Lectures and Essays

Creativity, Interdisciplinarity, and the New Relevance of the Arts. Invited lecture for Creativity in Singapore - a Symposium organized by the Singapore Research Nexus, Faculty of Arts and Social Sciences, NUS (2012.02.17)

Museum Rendezvous: Borders of Perception. Invited Panelist at the Marina Bay Sands Art Science Museum. (08/10/2011)

Music, Sound, Cities. Invited Lecture for the 8th ASEAN Youth Cultural Forum, "City, Technology, Tradition" (09/06/2010)

Art, Research, Collaborations, & Institutions. Invited Keynote for the IEEE International Conference on Media & Expo workshop on Science and Art. (23/07/2010)

Ties That Bind. Essay on science and music for extended program notes for the premier of Joyce Koh's music On A String, commissioned by the National Arts Council of Singapore. (6/2010)

Electroacoustic Music: Where do we go from here?, Invited panelist. *Electroacoustic Music Studies*, June 22-25, 2009 (Buenos Aires, Argentina).

Wyse, L. And Ong, J. (2007) *En asiatisk (media) tiger Singapores alternativa musikscen utvecklas i symbios med kreativitetsindustrin i allmänhet* - [English:] An Asian (media) tiger; Singapore's alternative music scene in symbiosis with creativity industries, in *Nutida Musik* 4 (in Swedish).

The Sounding Object and Musical Meaning. Presentation at the fourth International Conference on Multimodality (4-ICOM) – Technology, Multimodal Representation and Knowledge, Singapore 2008. (Invited Conference Plenary).

Nanayakara, SC, E.A. Taylor, L.L. Wyse and S.H. Ong, (2008) Augmented musical Experience with Visuals and Haptics, *Innovation Magazine – The Magazine of Research & Technology (NUS)*. (Invited Article).

Way to Go: The Impact of Process on Artists' Residencies in Science and Research Settings. International Symposium on Electronics Arts, Singapore 2008 (Invited Panelist).

Patent Applications

Haptic Chair Sound Enhancing System with Audiovisual Display, Elizabeth Oh, Suranga Nanayakkara, Lonce Wyse, Sim Heng, Kian Peen, Ghim Huitan. U.S. Patent# 8638966B2. Awarded Jan 28, 2014.

Method for Constructing Audio Signals from Spectrograms. Gerald Beauregard and Lonce Wyse. Provisional filing September, 2005.(I2R/Z/01070). Now public domain.

A synthesis-based method for packet loss recovery of transients in music streaming. Lonce Wyse and Ye Wang. Provisional filing, June 23, 2003, International Publication WO 2204/114134 A1. 29 Dec. 2004. Now public domain.

Method for Text-Labeling Sound Effects. Lonce Wyse and Gurminder Singh. (International Application #PCT/SG 99/00010, Filing Date Jan 20, 1999), Filed under the IPT. Awarded: Singapore Patent #82337. Now public domain.

[An Interactive Sound Effects System and Method of Producing Model-Based Sound Effects](#). Lonce Wyse and Peter Kellock. Application #9703500-0, Filing Date: Sept. 23, 1997, Awarded in Singapore. Now public domain.

Media Publication

Video Game: AudiOdyssey
MIT/Singapore Alliance: Summer GAMBIT Program:

Release Date: August 2007   **Download**: http://gambit.mit.edu/loadgame/audiodyssey.php
Role: Project Co-owner

Game Description: An experimental computer game designed to be accessible to both the visually impaired and mainstream gamers. Players take on the role of a DJ in a nightclub, and interact with the game via a Wiimote to lay down rhythmic tracks in synch with music to keep club goers dancing.

Development Role: Concept creation, design & development of embedded interactive audio system.

RESEARCH FUNDING AWARDS

(1)   **Folk Media: Interactive sonic rigs for traditional storytelling**
PI: Lonce Wyse
Amount: $40,000
Duration: 15 months, 2012.03.01 to 2013.06.31
Source: Ministry of Education (MOE), Singapore

(2)   **New Music and the Networked Ensemble**
PI: Lonce Wyse
Co-PI: Kevin McGee (NUS CNM), Ho CheeKong (NUS YST Conservatory of Music)
Amount: $538,478
Duration: 4yrs, 2008.01.01 to 2010.12.31 (extended to 2011.12.31)
Source: National Research Foundation (NRF), Singapore

(3)   **Listening Strategies for New Media; Experience and Expectation**
PI: Lonce Wyse
Co-PI: Trevor Penny, Annett Schirmer (NUS Psychology Department)
Amount: $250,000

Duration: 3 yrs, 2008.06.28 to 2011.06.27
Source: Academic Research Fund, National University of Singapore

(4)   Interactive Audio in Games
PI: Lonce Wyse
Amount: $100,000
Duration: 4 yrs, 2008.01.01 to 2011.12.31
Source: Media Development Authority (MDA), Singapore, GAMBIT Program

Program Funding Awards

(5) Singapore50 Sonic iSwarm (public art)
Collaborators: Suranga Nanyakkara, Lonce Wyse, Thomas Schroepfer, Aloysius Lian
Amount: $50,000
Duration: 1 year, 2014.11.01 to 2015.11.01
Source: National Singapore50 Fund

(6) ArtScience Residency
PI: Lonce Wyse & Margaret Tan
Amount: $40K
Duration: 4 months, 2015.01 – 2015.05
Source: Marina Bay Sands (private)

(7) Art/Science Residency Program
PI: Lonce Wyse & Margaret Tan
Amount: $43K
Duration: 4 months, 2013.08 – 2013.12
Source: Marina Bay Sands (private)

(8) Art/Science Residency Program
PI: Lonce Wyse
Amount: $50K
Duration: 2 yrs, 2011.01.01 – 2012.12.31
Source: National Arts Council

(9) IDMI Arts and Creativity Lab Start-up grant
PI: Lonce Wyse
Amount: $36K
Duration: 1 yr 2007.07.01 – 2008.06.31

(10) ISEA 2008, Artist-In-Residency Programme
Coordinator: Lonce Wyse
Amount: $350K
Duration: 1 year 2007.08.01 to 2008.08.01
Source: NUS Office of Research

GRADUATE STUDENTS SUPERVISED

Suranga Nanayakkara, 2008-2010, Ph.D. (Co-supervised with Dept. of Electrical and Computer Engineering). *Enhancing Musical Experience for the Hearing Impaired using Visual and Haptic Inputs.*

Liu Si Wei, 2008-2013, Ph.D. (Co-supervised with Dept. of Psychology) *Expectation and Categorization Outside the Focus of Auditory Attention.*

Soh Yong Hao, 2008-2010, Masters (Co-supervised with Dept. of Psychology) *On the Role of sound Context for the Processing of Auditory Objects*

Srikumar Subramanian, 2008-2013, Ph.D. (Co-supervised with Kevin McGee) *Synthesizing Prescriptive Notations of Compositions in Carnatak Music.*

Tatjana Todorovich, 2008-2010, Masters, *Mobile Computing for the 'Efficient Spatiality.'*

John Mead, 2009-2015 Ph.D. *A Framework for Understanding Practice As Research in Dance.*

Stefano Fasciani 2010-2014, Ph.D. *A Voice Controlled Interface for Digital Musical Instruments.*

Prashanth Thattai Ravikumar Masters (2015), (co-supervised with Kevin McGee) *Playing With Tension: A Computational Model of Secondary Rhythmic Accompaniment Playing in Carnatic Music;* PhD (2015-present) *Computational Creativity.*

Chow JunYan 2013-present Ph.D. (expected 2017) *Inter-modal communication in real-time performance.*

Mithila Harish 2014-present, Ph.D. (expected 2018) *Audio source reconstruction and synthesis.*

Thesis Committee Participation

Srikumar Subramanian, 2000, Masters, School of Computing, NUS, Representation and Manipulation of Musical Rhythm - a "Pulse Form" approach.

Michael Spicer, 2003, Masters, School of Computing, NUS, A real-time agent-based interactive music performance system.

Zhu Xing Lei, 2004, Masters, School of Computing, NUS, A real-time agent-based interactive music performance system.

Nicolas Mariette, 2009, PhD, Curtin University of Technology, *Perceptual Evaluation of Personal Location Aware Spatial Audio.*

Wang EnBo, 2009, PhD Physics, NUS, *Applications of Wavelets to Analysis of Piano Tones.*

Shirley Soh, 2009, Masters, CNM, NUS, *Cyborg Ontology and Politics in "Intelligent Nation" Singapore.*

Cong Ning, 2010, Masters, ECE, NUS, *Musical Composing on Pitch Time Table Based Tangible Tabletop Interface.*

Ben Swift, 2012, Ph.D. Australian National University, *The Design of a Smartphone-based Digital Musical Instrument for Jamming.*

Chung Lee, 2012, Ph.D. HK U. of Science and Technology, *Discrimination of Data-Reduced Sustained Musical Instrument Tones.*

Alex Mitchell, 2012, Ph.D. CNM, NUS (Thesis Advisory Committee Chair), *Rereadability in Procedural Hypertext Fiction.*

SELECTED MEDIA WORK

Sonic.SG (2015)
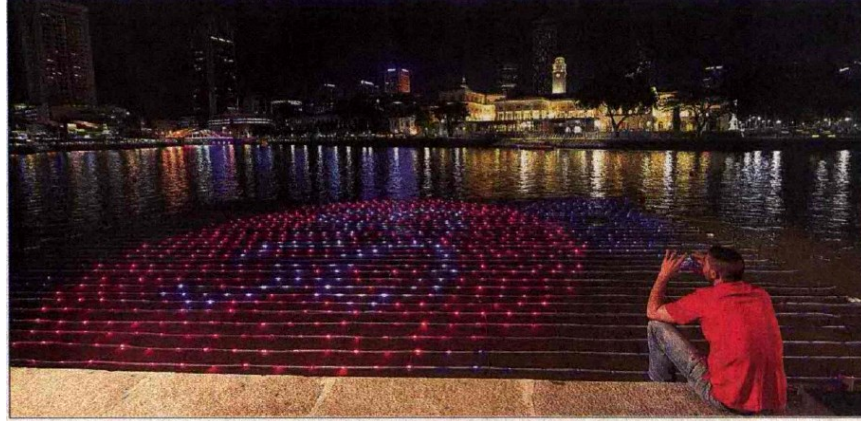
சிங்கப்பூர் ஆற்றில் ஓயுபி பிளாசா எதிரே, சிங்கப்பூரை ஒளியால் வரைந்துள்ள 'SonicSG' என்ற இந்த ஒளிக்காட்சி ஜனவரி 10ஆம் தேதி வரை இடம்பெறும். சிங்கப்பூரின் பொன் விழாவை ஒட்டி பிலிப்ஸ் நிறுவனம், தேசிய பல்கலைக்கழகம், சிங்கப்பூர் தொழில்நுட்ப, வடிவமைப்புப் பல்கலைக்கழகம் ஆகியவை 2,000 எல்ஈடி விளக்குகளால் இதனை உருவாக்கியுள்ளன. படம்: ஸ்ட்ரெய்ட்ஸ் டைம்ஸ்

[Sonic.sg](#), a floating 2000-LED display with sonified "personal pixels" mobile phone interaction connecting people with the installation and with each other, was installed as part of the SG50 celebration on the Singapore River in front of UOB Plaza (with Suranga Nanayakkara and Thomas Schröpfer).

States of Diffusion (2014)
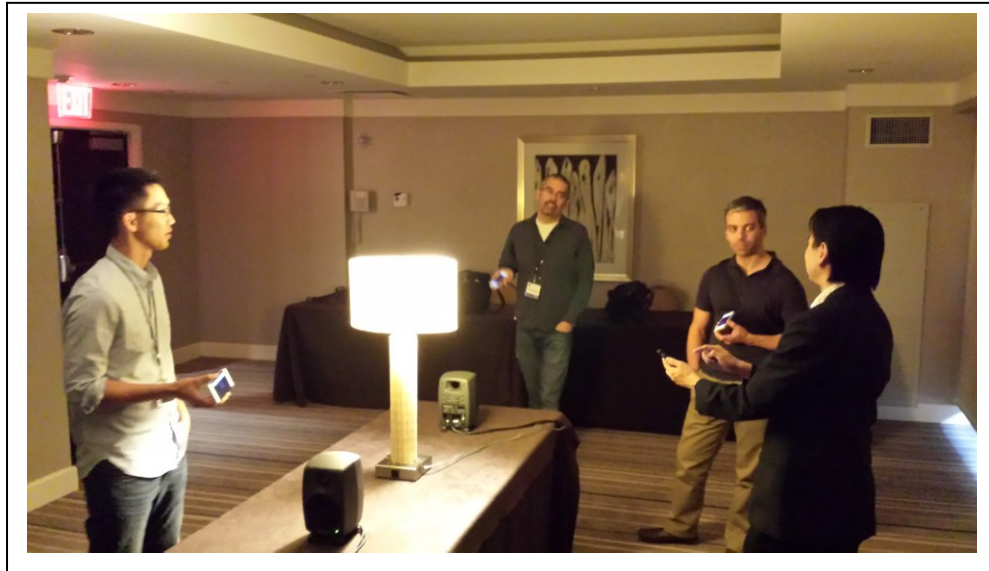
[States of Diffusion for n+1 devices](#). Browser-based sound spatialization across speakers & gallery visitor mobile devices.

D(Th)is Loca(mo)tion(!) (2010)

Interacting with concert hall sound in the lobby, listening to the results streamed to mobile devices in real time back in the concert hall.

Created by Accidental Consort (Lonce Wyse, B. Sudarshan, and Paviter Singh) with technical support from Norikazu Mitani as part of the Site Things event at the Young Musicians Society of Singapore.

Interactive Art for the Walls (2001)

• This is an interactive "painting" in which video sequences and the continuous evolution of the soundscape are determined by the amount of motion in the viewing area sensed through processing video camera input. (HD flatscreen display with sound system and camera).

Lonce Wyse: Media interactivity and sound design.
Yang Tien: Imagery and video.

POSITIONS, AWARDS, AFFILIATIONS

Editorial

2014-present	Editorial Board, **International Journal of Performance Arts and Digital Media** (IJPADM)
2010-present	Regional Editor, **Organized Sound,** Cambridge University Press
2010-present	Associate Editor, **Computer Music Journal,** M.I.T. Press
2014	Invited Guest Editor, *Organized Sound,* Special Issue on "Mediation: Notation and Communication in Electroacoustic Music Performance"
2013	Invited Guest Editor, *Organized Sound,* Special Issue on "Audiences and Participants"
2005-2010	Consulting Editor, *Computer Music Journal*. Current events.
2007	Co-curator, DVD of Computer Music, "Far and Wide", for the Computer Music Journal
1997	Invited Guest Editor, *ACM Multimedia Systems Journal*. Special Issue on Audio and Multimedia.

Awards

2013	Best Presentation Award, International Computer Music Conference. , "Sonicbard – Storytelling with real-time sound control, synthesis and processing using emerging browser-based technologies."
2013	Communications and New Media Department "Best Teacher" award.
1993-94	*Fulbright Fellowship*. One year spent at Taiwan National University.
1989-92	*U.S. National Defense Science & Engineering Graduate Fellowship*
1983	*Outstanding Mathematics Achievement Award*, University of Hartford
1978	*Interlochen Arts Academy Scholarship,* Music Composition

Conference Organization

2015	Associate Chair, ACM CHI Conference on Human Factors in Computing Systems
2014	Program Committee, International Computer Music Conference (ICMC 2014)
2010	Installations Program Committee, International Computer Music Conference (ICMC, 2010)
2009	International Programming Committee, International Symposium on Electronic Arts (ISEA2009).
2008	Organizing Committee, International Symposium on Electronic Arts (ISEA2008)
2006-8	Coordinator, Artist in Residence Program for the 2008 International Symposium on Electronic Arts.
2007	PC, audio track – IEEE Multimedia, Taiwan
2006	Co-Program Chair, Interactive Arts. *ACM Multimedia, Santa Barbara.*
2006	Co-Curator, Interactive Arts Exhibition. *ACM Multimedia, Santa Barbara.*
2005	Program Committee Interactive Arts, *ACM Multimedia, Singapore*
2003	Program Committee, International Conference on Computer Music; Singapore.